



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
PO Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/376,867	08/18/1999	ELIEZER PASTERNAK	B0259-1100	7051

7590 06/13/2003

TIMOTHY W LOHSE
PATENT DEPARTMENT
GRAY CARY WARE & FREIDENRICH
400 HAMILTON AVENUE
PALO ALTO, CA 943011825

EXAMINER

HA, NGUYEN T

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 06/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/376,867

Applicant(s)

PASTERNAK, ELIEZER

Examiner

Nguyen T Ha

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 and 26-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16, 18 and 22-25 is/are rejected.
- 7) ☒ Claim(s) 17 and 19-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). 3.
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-15 and 56, drawn to automatic frequency control, classified in class 375, subclass 344.
 - II. Claims 16-25, drawn to capacitor, classified in class 361, subclass 277.
 - III. Claims 26-36, drawn to transceivers, classified in class 445, subclass 26.
 - IV. Claims 40-47, drawn to oscillators, classified in class 331, subclass 47.
 - V. Claims 48-55, drawn to filters, classified in class 333, subclass 167.
 - VI. Claims 37-39, drawn to method for determining the sub-plate area, classified in class 438, subclass 400+.

The inventions are distinct, each from the other because of the following reasons:

Inventions I, II, III, IV and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention group II has separate utility such as in transceiving non-microwave frequencies, like low RF frequencies used in several types of communications; group IV has separate utility such as in converting frequencies up or down to a desired level in a wide range of frequencies (i.e. other than used in microwave frequencies); group V has separate utility such as selecting frequency band in any range. See MPEP § 806.05(d).

Inventions VI and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the

Art Unit: 2831

process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process as claimed can be used to make a different positioning the first and second sub-plates as a product claim, such as the first sub-plate is approximately $\frac{1}{4}$ of the total capacitance of the capacitor.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Timothy W. Lohse on 10/01/02 and 4/16/2003 a provisional election was made with traverse to prosecute the invention of group II, claims 16-25. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-15 and 26-56 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

2. Claims 16&19 are objected to because of the following informalities:

Claim 16, line 5, "said moving plate" is lack antecedent basis.

Claim 19, line 3, "effect" should deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2831

3. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18, lines 2-3, "a first sub-plate having an area such that the capacitance of the capacitor is approximately $\frac{1}{2}$ of the total capacitance of the capacitor" is unclear.

What does this mean?

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 16 and 22-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al (5,959,516).

Regarding claim 16 as best understood, Chang et al disclose direct digitally controlled capacitor for tuning a circuit to a microwave frequency (figures 1-8), the capacitor comprising:

- a control plate (14) that deflects in response to a second plate (18) being charged;
- the second plate comprising two or more sub-plates (32) electrically isolated at DC or low frequencies from each other and from said moving plate

Art Unit: 2831

(16), the sub-plates controlling the deflection of the moving plate in order to change the microwave frequency output from the capacitor (column 9 lines 49-53); and

- a plurality of tuning signals (12) attached to the sub-plates of the capacitor for controlling the capacitor.

Regarding claims 22&25, Chang et al disclose the moving plate of the capacitor comprises a cantilevered beam/interdigital cantilevered beam (24) and wherein said sub-plates are arranged in parallel to said cantilevered beam attached to the substrate (20) (figure 1).

Regarding claims 23&24, Chang et al disclose the moving plate of the capacitor further comprises a cantilevered beam/interdigital cantilevered beam (24) and wherein said sub-plates are arranged perpendicular to said cantilevered beam on the substrate (figure 1).

Allowable Subject Matter

6. Claims 17 and 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claim 17, the prior art alone or in combination does not teach the limitations of a first sub-plate having predetermined area such that the capacitance change of the capacitor based on the first sub-plate is approximately 1/2 of the total capacitance of the capacitor and a second sub-plate having a second predetermined area so that the change in the capacitance of the capacitor based on the second

Art Unit: 2831

sub-plate is approximately $1/2$ the change caused by the first sub-plate to create a binary weighting of the sub-plates so that when one or more of the sub-plates are charged, the control plate deflects a predetermined amount to change the capacitance of the capacitor and tune the microwave device attached to the capacitor.

With respect to claims 19-21, the prior art alone or in combination does not teach the limitation of the dimensions of each of said sub-plates that is driven by each of said tuning signals are set to represent a predetermined, substantially additive, binary weight of a desired tuning effect caused by the moving plate.

7. Claim 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

With respect to claim 18, the prior art alone or in combination does not teach the limitation of the sub-plates of the capacitor further comprises two or more sub-plates, wherein a second sub-plate having an area equal to approximately $1/2$ of the area of first sub-plate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T Ha whose telephone number is 703-308-6023. The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 703-308-3682. The fax phone numbers

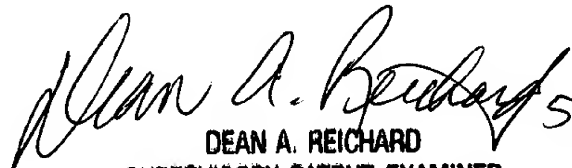
Art Unit: 2831

for the organization where this application or proceeding is assigned are 703-305-3432 for regular communications and 703-305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

NH

May 19, 2003

 5/19/03
DEAN A. REICHARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800